

ECTOPARASITES OF CANADIAN BIRDS AND MAMMALS¹NIXON WILSON, *Bernice P. Bishop Museum, Honolulu, Hawaii 96819*

A small collection of ectoparasites from birds and mammals is listed with comments relative to host relationships and distribution in Canada. Important past references to each species in Canada are reviewed briefly. Eighteen species belonging to 7 orders are listed from 13 species of birds and mammals. Eight of these are new Canadian, provincial and/or host records.

Specimens have been distributed between Joseph Moore Museum, Earlham College, Richmond, Indiana and Bernice P. Bishop Museum. Thanks are extended to Mr. W. W. Baker, Dr. R. E. Mumford and Mrs. G. L. Ward for providing most of the material for study.

List of Ectoparasites
Class ACARINA

Order METASTIGMATA
Family IXODIDAE

***Haemaphysalis leporispalustris* (Packard)**

1 ♂, 1 ♀, ex *Lepus americanus* Erxleben, New Brunswick, Charlotte Co., Kent I., 25.VII.1963, I. L. Brisbin (FN 29).

This is the tick encountered most often on leporids in North America. Gregson (1956) tabulated many records from Canada including four from New Brunswick.

***Ixodes angustus* Neumann**

1 ♀, ex *Tamias striatus* (Linnaeus), Ontario, Thessalon, 64 km N, 26.VII.1965, J. B. Cope (JBC 581).

According to Gregson (1956) this species is best known from the western provinces but is found throughout Canada. He listed it from this host in Ontario.

Order MESOSTIGMATA
Family HAEMOGAMASIDAE

***Eulaelaps stabularis* (Koch)**

1 ♀, ex *Sorex cinereus* Kerr, Saskatchewan, Regina, 3 km SE, 28.VIII.1959, N. Wilson (E 1156); 1 ♀, ex *Microtus pennsylvanicus* (Ord), Saskatchewan, Regina, 3 km SE, 28.VIII.1959, N. Wilson (E 1157).

E. stabularis is a widespread species recorded mostly from rodents and insectivores. This is the first record from Saskatchewan and from *S. cinereus*. All previous Canadian records are from Ontario (Banks, 1909; Jameson, 1950; Judd, 1950).

***Haemogamasus ambulans* (Thorell)**

1 ♀, ex *Eutamias minimus* (Bachman), Ontario, Chapleau, 32 km E, VII.1965, W. H. Buskirk and J. B. Cope.

¹This investigation was supported in part by Public Health Service Research Grant AI-01723 from the National Institutes of Allergy and Infectious Disease, National Institutes of Health, Public Health Service.

This species is known from the northern United States, Canada and Alaska under the name *Haemogamasus alaskensis* Ewing. Rodents and insectivores are the common hosts. It never has been reported from *E. minimus* but there are records from Ontario (Jameson, 1950; Keegan, 1951). The record of *Haemogamasus hirsutus* Berlese from Ontario by Judd (1950) may be this species.

Family LAELAPIDAE

Androlaelaps fahrenheiti (Berlese)

1 N, ex *Microtus pennsylvanicus*, Saskatchewan, Regina, 3 km SE, 28.VIII.1959, N. Wilson (E 1157).

This is a widespread species occurring most frequently on rodents. It has been recorded from Canada by Strandtmann (1949), Jameson (1950), Judd (1950, 1953) and Scholten et al. (1962), but never from Saskatchewan.

Laelaps alaskensis Grant

3 ♀♀, ex *Microtus pennsylvanicus*, Ontario, Attawapiskat, 7.VII.1965, J. B. Cope et al. (JBC 550).

This rodent mite has been reported from Keewatin and Ellef Ringnes Island in Canada (Harper, 1956; McAlpine, 1964; 1965). Records of *Laelaps muris* (Ljungth) from Ontario by Judd (1950; 1953; 1954) are probably this species.

Order PROSTIGMATA

Family TROMBICULIDAE

Enselongastia sp.

40 LL, ex *Microtus pennsylvanicus*, Saskatchewan, Regina, 3 km SE, 27.VIII.1959, N. Wilson (E 1155).

All specimens lack sensillae making specific identification impossible. They are very close to *E. campii* Brown and Brennan and *E. sciuricola* (Ewing) both of which have been collected in Canada (Brown and Brennan, 1952; Farrell, 1956).

Class INSECTA

Order ANOPLURA

Family HOPLOPLEURIDAE

Hoplopleura acanthopus (Burmeister)

1 ♂, 2 ♀♀, ex *Microtus pennsylvanicus*, Saskatchewan, Regina, 3 km SE, 28.VIII.1959, N. Wilson (E 1157).

H. acanthopus is a common ectoparasite of *Microtus* in North America and has been reported previously from Canada (Ferris, 1921; Harper, 1956; Scholten et al., 1962; McAlpine, 1964, 1965; Spencer, 1966).

Order MALLOPHAGA

Family MENOPONIDAE

Myrsidea anaspila (Nitzsch)

2 ♀♀, ex *Corvus corax* Linnaeus, Ontario, Moosonee, 28.VI.1965, J. B. Cope; 2 ♀♀, 1 N, ex *C. corax*, Ontario, Moosonee, 15.VII.1965, J. B. Cope and W. H. Buskirk.

Neither Spencer (1948, 1957), Stirrett (1952) nor Whitehead (1954) listed this species from Canada; however, it is to be expected on the common raven.

Trinoton querquedulae (Linnaeus)

1 ♂, ex *Anas carolinensis* Gmelin, Manitoba, Delta, 13.VIII.1964, D. A. Manuwal.

This mallophagan occurs on several species of ducks and has been collected from this locality on this host (Buscher, 1965). There are other Canadian records from British Columbia (Spencer, 1948), Ontario (Stirrett, 1952) and Quebec (Whitehead, 1954).

Family PHILOPTERIDAE

Saemundssonina sterna (Linnaeus)

1 ♀, ex *Sterna hirundo* Linnaeus, Manitoba, Delta, 13.VIII.1964, D. A. Manuwal (REM 4501).

This species is expected to occur wherever the common tern does, although apparently it has not been collected in Canada.

Order SIPHONAPTERA

Family CERATOPHYLLIDAE

Megabothris atrox (Jordan)

4 ♀♀, ex *Mustela erminea* Linnaeus, Ontario, Moosonee, 14.VII.1965, W. H. Buskirk (B).

Holland (1949) mentioned only two records of this species; that of Jordan's from Alberta and a new one from Northwest Territories. The above record extends the range about 2,300 km eastward in Canada. The few collections indicate this flea is a parasite of weasels.

Three of four specimens varied from the original description in that they had fewer pronotal spines (23, 23, 24, 26). Jordan (1925) indicated there were 26 to 29 spines in the pronotal ctenidium of his specimens which suggested to him that it might be a bird flea.

Megabothris quirini (Rothschild)

2 ♂♂, 1 ♀, ex *Mustela erminea*, Ontario, Moosonee, 14.VII.1965, W. H. Buskirk (A); 1 ♂, ex *M. erminea*, Ontario, Moosonee, 14.VII.1965, W. H. Buskirk (B).

This flea is normally a parasite of cricetid rodents and the present records may reflect predation by weasels on these rodents. This is a widespread species in Canada and Holland (1949) listed several records from Ontario.

Monopsyllus eumolpi eumolpi (Rothschild)

1 ♂, ex *Eutamias minimus*, Ontario, Chapleau, 32 km E, VII.1965, W. H. Buskirk and J. B. Cope.

This chipmunk flea probably occurs throughout the range of *Eutamias* in Canada. Holland (1949) and Hubbard (1949) each reported three records from Ontario.

Monopsyllus vison (Baker)

1 ♂, ex crawling on *Homo sapiens* Linnaeus, Ontario, Moosonee, 12.VII.1965, W. H. Buskirk. 2 ♂♂, ex *Mustela erminea*, Ontario, Moosonee, 14.VII.1965, W. H. Buskirk (B).

This species is widespread in Canada with *Tamiasciurus hudsonicus* (Erxleben) the true host. The specimen from man probably was acquired while handling

mammals and those from a weasel reflect the predatory nature of this animal. Holland (1949), Hubbard (1949) and Scholten et al. (1962) listed several records from southern Ontario.

***Orebopeas caedens durus* (Jordan)**

2 ♂♂, 2 ♀♀, ex *Mustela erminea*, Ontario, Moosonee, 14.VII.1965, W. H. Buskirk (B).

The subspecies *durus* has a widespread but discontinuous distribution in Canada. Its true host is *T. hudsonicus* and the above record probably indicates predation by the weasel on red squirrels. There are several records of this species from Ontario (Holland, 1949; Judd, 1954; Scholten et al., 1962).

Family ISCHNOPSYLLIDAE

***Myodopsylla insignis* (Rothschild)**

1 ♂, 1 ♀, ex *Myotis lucifugus* (Le Conte), New Brunswick, Charlotte Co., Kent I., 17.VIII.1963, I. L. Brisbin (FN 54).

M. insignis is widely distributed in Canada from inland British Columbia to New Brunswick, from which latter province the above record is the first. Bats of the genus *Myotis*, especially *M. lucifugus*, are recorded most frequently as hosts.

Order DIPTERA

Family HIPPOBOSCIDAE

***Ornithomya fringillina* Curtis**

1 ♂, ex *Zonotrichia albicollis* (Gmelin), Ontario, Moosonee, 15.VII.1965, J. B. Cope and W. H. Buskirk; 1 ♀, ex *Passerella iliaca* (Merrem), Ontario, Moosonee, 16.VII.1965, J. B. Cope; 1 ♂, ex clothing, Ontario, Moosonee, 17.VII.1965, W. H. Buskirk; 1 ♀, ex *Z. albicollis*, Ontario, Moosonee, 21.VII.1965, J. B. Cope.

This is a common hippoboscid of certain species of passeriform birds in temperate North America and there are numerous records from Canada, including Ontario, (Bequaert, 1954; Davies, 1958; Bennett, 1961). The fox sparrow apparently is not one of the preferred hosts as Bequaert (1954) published only one verified record.

REFERENCES

- Banks, N.** 1909. New Canadian mites. Proc. Ent. Soc. Wash. 11(3): 133-143.
Bennett, G. F. 1961. On three species of Hippoboscidae (Diptera) on birds in Ontario. Can. J. Zool. 39: 379-406.
Bequaert, J. C. 1954. The Hippoboscidae or louse-flies (Diptera) of mammals and birds. Part II. Taxonomy, evolution and revision of American genera and species. Ent. Amer. 34(N.S.): 1-232.
Brown, J. H. and J. M. Brennan. 1952. A note on the chiggers (Trombiculidae) of Alberta. Can. J. Zool. 30: 338-343.
Buscher, H. N. 1965. Ectoparasites from anseriform birds in Manitoba. Can. J. Zool. 43: 219-221.
Davies, D. M. 1958. Notes on avian hippoboscids. J. Parasit. 44(2): 239-240.
Farrell, C. E. 1956. Chiggers of the genus *Euschongastia* (Acarina: Trombiculidae) in North America. Proc. U. S. Natl. Mus. 106 (3364): 85-235.
Ferris, G. F. 1921. Contributions toward a monograph of the sucking lice. Part II. Stanford Univ. Publ., Univ. Ser., Biol. Sci. 2(2): 53-133.

- Gregson, J. D.** 1956. The Ixodoidea of Canada. Can. Dept. Agr. Publ. 930, 92 pp.
- Harper, F.** 1956. The mammals of Keewatin. Univ. Kans. Mus. Nat. Hist., Misc. Publ. No. 12, 94 pp.
- Holland, G. P.** 1949. The Siphonaptera of Canada. Can. Dept. Agr. Publ. 817, Tech. Bull. 70, 306 pp.
- Hubbard, C. A.** 1949. Fleas in the collection of the Royal Ontario Museum of Zoology. Can. Ent. 81(1): 11-12.
- Jameson, E. W., Jr.** 1950. The external parasites of the short-tailed shrew, *Blarina brevicauda* (Say). J. Mammal. 31(2): 138-145.
- Jordan, K.** 1925. New Siphonaptera. Novit. Zool. 32: 96-112.
- Judd, W. W.** 1950. Mammal host records of Acarina and Insecta from the vicinity of Hamilton, Ontario. J. Mammal. 31(3): 357-358.
- . 1953. Mammal host records of Acarina and Insecta from the vicinity of London, Ontario. J. Mammal. 34(1): 137-139.
- . 1954. Some records of ectoparasitic Acarina and Insecta from mammals in Ontario. J. Parasit. 40(4): 483-484.
- Keegan, H. L.** 1951. The mites of the subfamily Haemogamasinae (Acari: Laelaptidae). Proc. U. S. Natl. Mus. 101 (3275): 203-268.
- McAlpine, J. F.** 1964. Arthropods of the bleakest barren lands: composition and distribution of the arthropod fauna of the Northwestern Queen Elizabeth Islands. Can. Ent. 96(1-2): 127-129.
- . 1965. Insects and related terrestrial invertebrates of Ellef Ringnes Island. Arctic 18(2): 73-103.
- Scholten, T. H., K. Ronald, and D. M. McLean.** 1962. Parasite fauna of the Manitoulin Island region. I. Arthropoda parasitica. Can. J. Zool. 40: 605-606.
- Spencer, G. J.** 1948. Some records of Mallophaga from British Columbia birds. Proc. Ent. Soc. Brit. Columbia 44: 3-6.
- . 1957. Further records of Mallophaga from British Columbia birds. Proc. Ent. Soc. Brit. Columbia 53: 3-10.
- . 1966. Anoplura from British Columbia and some adjacent areas. J. Ent. Soc. Brit. Columbia 63: 23-30.
- Stirrett, G. M.** 1952. Mallophaga collected from birds in Ontario. Can. Ent. 84(7): 205-207.
- Strandtmann, R. W.** 1949. The blood-sucking mites of the genus *Haemolaelaps* (Acarina: Laelaptidae) in the United States. J. Parasit. 35(4): 325-352.
- Whitehead, W. E.** 1954. Avian Mallophaga from Quebec. Can. Ent. 86(2): 65-68.
-